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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,890	07/12/2000	Darko Kirovski	MS1-587US	2503

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EXAMINER

COLIN, CARL G

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 11/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/614,890

Applicant(s)

KIROVSKI ET AL.

Examiner

Carl Colin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-7,9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Pursuant to USC 131, claims 1-34 are presented for examination.

Specification

2. The disclosure is objected to because of the following informalities: on page 13, line 17, reference number "14012" should be --140-- also, on page 20, line 20, the word "have" should be --having--. On page 21, line 4, the word "is" is missing. Appropriate correction is required.

- 2.1 The use of the trademark "MICROSOFT WINDOWS 2000" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Drawings

3. Figure 2 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not include the following reference signs: reference number (112) in the description on page 17, lines 20-21.

Figure 6 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not include the following reference signs: reference (b1, b2, b3) in the description on page 29, line 23 and page 30, lines 8, 9, 11. Appropriate correction is required.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. **Claim 18** is objected to because of the following informalities: on line 19, the word “for” is repeated. Appropriate correction is required.

4.1 **Claims 6, 12, and 28** are objected to because of the following informalities: “an” digital signal should be --a-- digital signal. **Claim 34**, line 1, “an” permuted data channel should be --a-- permuted data channel. **Claim 17**, line 3, “quantity” should be replaced with --number--.
Claim 14 is objected to for lack of indentation of limitation. **Claim 5**, line 3 “the signal” should be replaced with --the digital signal--.

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the application.

4.2 **Claims 18 and 19** are objected to because they are substantial duplicates of other claims. Applicant is advised that should **claim 8** be found allowable, **claim 18** will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Applicant is also advised that should **claim**

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13 be found allowable, **claim 19** will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 23 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5.1 Regarding **claim 23**, the phrase "an operating system" renders the claim(s) indefinite because it is not clear whether the operating system refers to a software or hardware.

5.2 Regarding **claim 28**, the phrase "the digital signal" renders the claim(s) indefinite because it is not clear to which signal the claim is referring.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 9, 14, 16, 24, 30, 34 and the intervening claims are rejected under 35

U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The signal cited in these claims is not embodied in a computer hardware.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7.1 **Claims 1-15 and 18-29** are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,330,672 to Shur.

7.2 **As per claim 1, Shur** discloses a method for concealing data within a digital signal, the method comprising: receiving a first data pattern of discrete values and a second data pattern of discrete values (see column 2, and column 3, lines 40-67); imposing a discrete value of the second data pattern over one or more values of the first data pattern (see column 2, and column 3, lines 40-67).

As per claim 2, Shur discloses the limitation of encoding a third data pattern into the digital signal, wherein such third data pattern is the result of the imposing (column 9, lines 38-50).

Claims 8, 20, 22, 23, and 18 recite the same limitation as the rejected **claims 1 and 2**. Therefore, **claims 8, 20, 22, and 18** are rejected on the same rationale as the rejection of **claims 1 and 2**.

As per claims 9, 13, 19, and 21, Shur discloses a method and apparatus for revealing a covert data pattern of discrete values from an encoded data pattern of discrete values in a digital signal, the method comprising: receiving the encoded data pattern and extracting a discrete value of the covert data pattern from one or more values of the encoded data pattern (see column 11, line 25-55).

As per claim 24, Shur discloses as prior art imposing a discrete value of the covert data pattern over one or more values of the original data pattern (see columns 2 –3); encoding results of the imposing within an unmarked signal to produce the marked signal (see column 4, lines 45 et seq.).

As per claims 3 and 25, Shur discloses the limitation of wherein the imposing comprises performing a Boolean operation with a discrete value of the second data pattern and one or more values of the first data pattern (see column 9, lines 10-50).

As per claims 4 and 26, Shur discloses the limitation of wherein the imposing comprises XORing a discrete value of the second data pattern with one or more values of the first data pattern (see column 9, lines 10-50).

As per claims 5 and 27, Shur discloses the limitation of wherein a pattern of discrete values may be encoded into the signal in one of multiple discrete states (see column 11, lines 3-6); the imposing comprises encoding one or more values of the first data pattern into the digital signal into a state that indicates a discrete value of the second data pattern (see column 4).

As per claims 6, 12, and 28, Shur discloses the limitation of wherein the digital signal is an audio signal (see column 3, lines 34-38).

As per claims 7 and 29, Shur discloses the limitation of wherein the first data pattern is a watermark (see column 3, lines 40-45).

As per claim 10, Shur discloses the limitation of detecting an original data pattern within the encoded data pattern of the digital signal (see column 12, lines 4-6).

As per claim 11, Shur discloses the limitation of wherein a pattern of discrete values may be encoded into the signal in one of multiple discrete states (see column 11, lines 3-6); the extracting comprises decoding a discrete value of the covert data pattern from the digital signal based upon a state of a one or more discrete values of the encoded data pattern (see column 3, lines 40-65 and column 4).

As per claim 14, Shur discloses a method for encoding a watermark with a covert message into a digital audio signal, wherein binary bits of the watermark may be encoded into the signal in multiple states (see column 3, lines 40-65 and column 11, lines 3-6); the method comprising encoding one or more bits of the watermark into the digital signal into a state that indicates a discrete value of the covert message (see column 3, lines 40-65 and column 4).

As per claim 15, Shur discloses the limitation of wherein the multiple states are positive or negative modifications to magnitudes of one or more subbands in the frequency spectrum of a sample of the signal (column 7, lines 55 et seq.).

8. **Claims 30-34** are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,192,139 to **Tao**.

8.1 **As per claims 30, 33, and 34 Tao** discloses a method for concealing data within a digital signal, the method comprising: receiving a set of data having an original order (see column 5, lines 1-8); permuting the set of data so that it is in a different order than the original (see column 5, lines 1-8); encoding the permuted set of data into the digital signal (see column 5, lines 1-8).

As per claim 31, Tao discloses the limitation of wherein the permuting utilizes a permutation table to determine the order in which to permute the set of data (see column 9, lines 1-37).

As per claim 32, Tao discloses the limitation of where in the set of data is a portion of a watermark (see figure 3).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to

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which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9.1 **Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,633,652 to **Shur** in view of **Zhao et al.**, "A generic Digital Watermarking Model", Comput. & Graphics, Vol. 22, No. 4, pp.397-403, 1998.

9.2 **As per claim 16**, **Shur** substantially teaches a method for imposing a covert message into a watermark, the method comprising: assigning a watermark to each of possible discrete value for a portion of the covert message (see column 4, lines 56-64); selecting a watermark that corresponds to an actual discrete value of a specific portion of the covert message (see column 11, lines 35-56; see also column 4, lines 45-64); encoding the selected watermark into the signal (see column 4, lines 45-64). **Shur** does not explicitly teach generating multiple watermarks. However, **Zhao et al.** in an analogous art teaches generating multiple watermarks (page 401). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Shur** to generate multiple watermarks as taught by **Zhao et al.**. This modification would have been obvious because one skilled in the art would have been motivated by the suggestions provided by **Zhao et al.** so as to overwrite noise added by previous watermarks as per **Zhao et al.** (page 401).

As per claim 17, **Zhao et al.** substantially teaches the size of covert message with N bits long resulting into 2^N multiple watermarks (see page 399).

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as the art discloses the use of inserting a watermark into signal and use for embedding data.

US Patents:	6,128,736	Miller
	6,031,914	Tewfik et al.

10.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl Colin whose telephone number is 703-305-0355. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

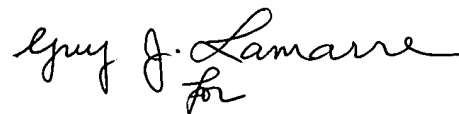
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

cc

Carl Colin

Patent Examiner

November 21, 2003



**Albert DeCady
Primary Examiner**